



# I/M Design Concepts

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# I/M Design Concepts

- Kickoff Meeting Review
- Contract Designs
- Vehicle Testing Designs
- Motorist Equity Designs
- Motorist Convenience Designs
- Vehicle Registration Designs

# Why Is Ozone a Concern?

- Breathing ozone is harmful to human health
  - Irritates respiratory systems
  - Aggravates asthma, emphysema and bronchitis
  - Inflames and damages linings of lungs
- People most susceptible include those with respiratory illnesses, older adults, healthy adults and children who are active outdoors

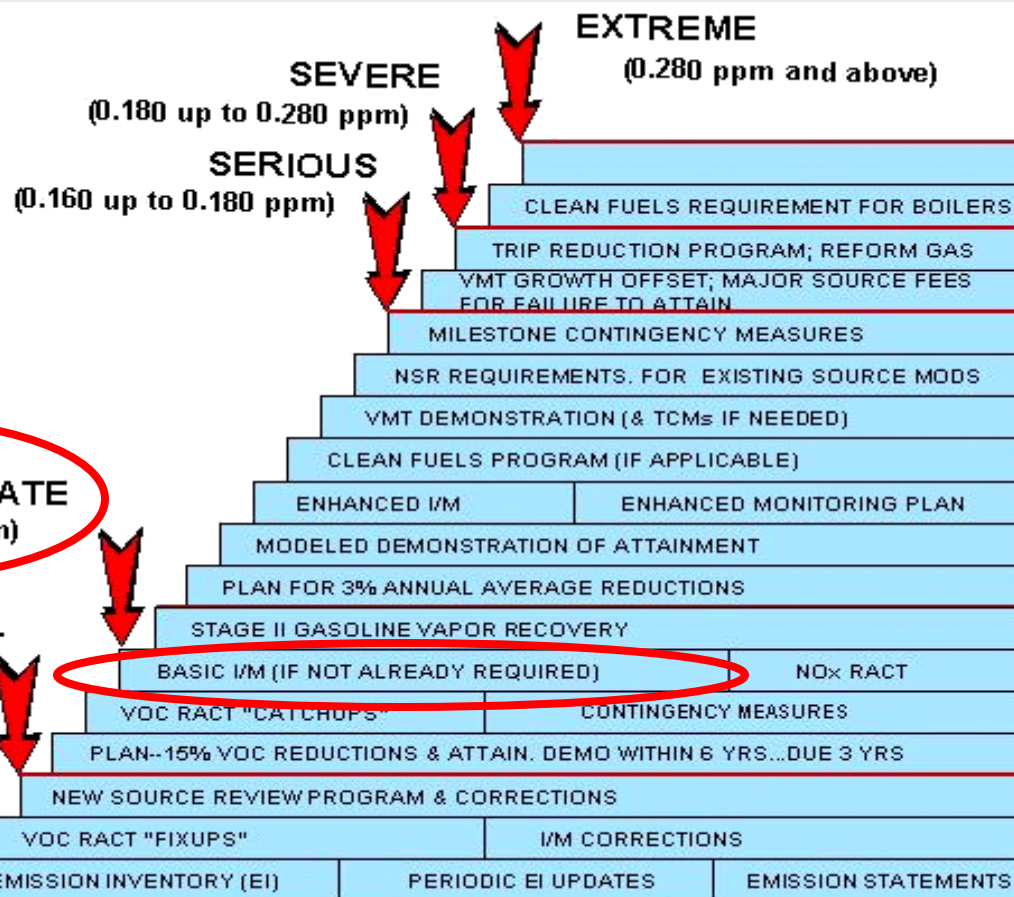
# Why is I/M Required in St. Louis?

## Ozone Control Requirements (VOC and NOx)

**St. Louis**

**MODERATE**  
(0.138 up to 0.160 ppm)

**MARGINAL**  
(0.121 up to 0.138 ppm)



# Contract Designs

- Who does the testing?
- Who pays for the testing?
- When is testing available?
- How long is the next I/M contract?
- Local economic benefits

# Vehicle Testing Designs

- Vehicle Model Years
- Emissions Test Methods
- Cost Limit Waivers
- Emissions Test Frequency
- Fraud Prevention
- I/M Program Evaluation
- I/M Program Incentives

# Motorist Equity Designs

- Vehicle Ownership Changes
- Vehicle Fleets
- Exemptions/Extensions
- Repair Assistance
- Other Vehicle Pollution Sources

# Vehicle Ownership Changes

- Inspection at sale? Who pays?
- Is selling a car with a waiver acceptable?
- Sales by private owners
- Sales by car dealers

**Motorist Equity Designs**



# Vehicle Fleets

## ■ Federal, State, Local Agencies

- General Service Administration, United States Postal Service, MoDOT vehicles, Police cars, City maintenance vehicles, etc.
- Plates are not tied to state's registration database, vehicles are difficult to track
- Vehicles usually regularly maintained by fleet managers

**Motorist Equity Designs**

# Vehicle Fleets

## ■ Private Fleets

- AmerenUE, SBC, MSD, Taxis, etc.
- Most have state-issued plates tied to state's registration database, vehicles easier to track
- Vehicles usually regularly maintained by fleet managers
- Special considerations:
  - Vouchers/Direct billing
  - Self Testing

**Motorist Equity Designs**

# Exemptions/Extensions

- Age of Driver exemption
  - Is age a fair criteria?
- Income of Driver
  - Is income a fair criteria?
- Annual Mileage of Vehicle
  - Is mileage a fair criteria?
- Additional time to complete repairs
  - Is additional time a fair criteria?

**Motorist Equity Designs**

# Repair Assistance

- Source of funds
- Source of assistance
  - Who administers?
- Qualification Criteria
- Spending Criteria
- Other forms of assistance
  - Investigative diagnosis
  - Guided or co-pay repairs

**Motorist Equity Designs**

# Other Vehicle Pollution Sources

- Non-I/M solutions for:
  - Vehicles over 8,500 pounds  
Gross Vehicle Weight Rating
  - Diesel-powered vehicles
  - Smoking vehicles
  - Idling vehicles
  - Off-road vehicles

**Motorist Equity Designs**

# Motorist Convenience Designs

- Combined Safety/Emissions Testing
- Clean Screening
- Remote OBD testing – Vehicle self-reporting
- OBD Kiosks – Vehicle owner self-testing

# Combined Safety/Emissions Testing

- Provide emissions tests at safety test stations?
- Provide safety tests at emissions test stations?
- Can functionally different tests coexist?
- Motorist wait times concerns

**Motorist Convenience Designs**

# Clean Screening

## ■ Concept

- Clean-running vehicles get to skip an emissions test
- Should a test fee/reduced fee be charged?

## ■ Methods of identification

- New model year exemptions
- Remote Sensing (vehicle is seen on-road)
- Low Emitter Index (vehicle is not seen on-road)

## ■ Pros

## ■ Cons

**Motorist Convenience Designs**



# Remote OBD testing

- Similar to Mobil SpeedPass or E-Z Pass Automatic Toll Collection
- Continuous vehicle self reporting
- One time cost to motorist
- What happens if vehicle fails?
- What happens if vehicle isn't repaired?
- Cost of data collection network

**Motorist Convenience Designs**

# OBD Kiosks

- Similar to Automatic Teller Machine or Self check-out shopping lanes
- Vehicle owner conducts own test
- What happens if vehicle fails?
- Security of kiosk device
- Accuracy of kiosk data

**Motorist Convenience Designs**

# Vehicle Registration Designs

- Vehicle Registration Options
- License Plate Tab Theft
- Registration Integrity
- Emissions Test Verification
- Value of Emissions Data

# Vehicle Registration Options

- Mail
- Fee Office
  - Vehicle registration at emissions test stations?
  - Should emissions test stations provide all fee office functions?
- Internet
  - Provide internet access at emissions stations?

**Vehicle Registration Designs**

# License Plate Tab Theft

- Stolen tabs are one of the most often reported crimes in St. Louis area
- Public cost of unregistered vehicles
  - Property tax rates
  - Vehicle insurance rates
  - Unsafe vehicles
  - Polluting vehicles
- Alternatives to license plate tabs?

**Vehicle Registration Designs**

# Registration Integrity

- Falsified/fake emissions test certificates
- Falsified/fake insurance, property tax, safety inspection receipts
- Insider transactions
- Which state agency has responsibility?
- Need a consistent, committed enforcement mechanism to minimize success of fraudulent registration attempts

**Vehicle Registration Designs**

# Emissions Test Verification

- Paper
- Electronic (delay)
- Electronic (live)

**Vehicle Registration Designs**

# Value of Emissions Data

- Who “owns” the emissions data?
- Who wants the emissions data?
  - Used car sales consumer protection companies
  - EPA and vehicle manufacturers
  - Researchers/Consultants
- What can be done with emissions data?
  - Manufacturer compliance and recalls
  - National research/comparison

**Vehicle Registration Designs**



# I/M Design Concepts Review

- Many designs are possible
  - Contract
  - Vehicle Testing
  - Motorist Equity
  - Motorist Convenience
  - Vehicle Registration
- Questions/Discussion

# Basic I/M Performance Standard

- Centralized network
- Annual Test
- Light Duty Vehicles only
- OBD II test for 1996 + Model Years
- Idle test for 1968-1995 Model Years
- 0 % Waiver Rate
- 100% Compliance Rate

# Enhanced I/M Performance Standard

- Centralized network
- Annual Test
- Light Duty Vehicles and Trucks
- OBD II test for 1996 + Model Years
- IM240 test for 1986-1995 Model Years
- Idle test for 1968-1985 Model Years
- Visual Inspection of Components
- 3 % Waiver Rate
- 96% Compliance Rate
- Dirty screening of 0.5% of fleet